

2. (Amended) An apparatus for removing dissolved gases from water to be evaporated in connection with a falling film evaporator, which apparatus comprises:

5 an arrangement of vertical (evaporating) evaporator channels which convert water passing therethrough into vapor; [and]

at least one spraying device [(3)] for breaking [the] heated feed-water into a spray of droplets having a [hit] spray pattern substantially corresponding to [the] an area of [the] an upper end [(4)] of the evaporator channel arrangement[, characterized in that it comprises]; and,

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at least one separated gas outlet [(5)] for the removal of gases [separating] separated from the sprayed droplets prior to the droplets entering the upper end of the evaporator channel arrangement reducing dissolved gas contamination of the vapor.

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3. (Amended) An apparatus as defined in claim 2[, **characterised** in that it comprises; further including:

a trough having a perforated bottom, [and] the trough lying above the upper end [(4)] of the evaporator channel arrangement.

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4. (Twice Amended. The apparatus as defined in claim 2[, **characterised** in that it comprises) further including:

a substantially hemispherical chamber[, covering the upper end of the evaporator (tube) channel arrangement such that the upper end of the evaporator channel arrangement forms a [forming the] plane side [thereof] of the hemispherical chamber; and,

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the separated gas outlet being defined in the hemispherical chamber for removing the separated gases before they can enter the evaporator channel arrangement.

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5. (Amended) The apparatus as defined in claim 3, characterised in that it comprises a substantially hemispherical) further including:

- 5 a chamber(,) covering the upper end of the evaporator  
[tube] channel arrangement [forming the plane side thereof], the  
separated gas outlet being defined in the chamber.

6. (Amended) A method of feeding water to heat transfer surfaces of a falling film evaporator having vertical evaporation channels, the method comprising:

- 5 spraying drops of water with absorbed atmospheric  
gases to distribute the water over the upper ends of the  
vertical evaporation channels;

simultaneously with the spraying, separating the  
atmospheric gases from the water;

- 10 evaporating the water in the vertical evaporation  
channels; and,

discharging the water vapor separately from the  
separated gases and maintaining the water vapor separate from  
the separated gases to prevent dilution of the water vapor with  
the separated gases.

8. (Amended) An apparatus for removing dissolved atmospheric gases from water, the apparatus comprising:

- 5 a falling film evaporator which includes a plurality  
of vertical evaporating channels, the vertical evaporating  
channels having upper ends arranged in an evaporator channel  
upper end arrangement for receiving water to be vaporized,  
product vapor exiting from a lower end of the channels;  
a chamber covering the evaporator channel upper end  
arrangement;

- 10 at least one spraying device [which] disposed in the  
chamber to break[s] the water into a spray of droplets having  
a spray pattern which corresponds to an area of the vertical  
evaporating channel upper end arrangement; and

- 15 at least one dissolved gas outlet from the chamber  
for removal of the atmospheric gases separated from the water  
droplets during spraying before the water droplets enter the

evaporating channels, such that the product vapor has a lower concentration of atmospheric gases than the water.

9. (Amended) The apparatus as set forth in claim 8 wherein the vertical evaporating channel upper end arrangement is confined to a circular area and further including a hemispherical chamber mounted to the vertical evaporating channel upper end arrangement, the spraying device being mounted to the hemispherical chamber such that the spray of droplets is confined within the hemispherical chamber).

10. (Amended) The apparatus as defined in claim 8 further including:

a perforated plate mounted in the chamber above and separated from the evaporator channel upper end arrangement, the spray of droplets being sprayed onto the plate, the water passing through perforations in the plate to the evaporator channel upper ends.

Please add new claims 11-12 as follows:

11. (New) A method of purifying water comprising: spraying feed water for simultaneously (i) separating nitrogen, oxygen, carbon dioxide, and other dissolved water soluble atmospheric gases from the feed water, and (ii) distributing the feed water over upper ends of vertical evaporation tubes;

removing the separated nitrogen, oxygen, carbon dioxide, and other dissolved water soluble atmospheric gases from the sprayed feed water;

passing the sprayed feed water from which the water soluble atmospheric gases have been separated through the vertical evaporation channels and converting at least a portion of the feed water to steam; and,

discharging the steam separate from the separated nitrogen, oxygen, carbon dioxide, and other water soluble atmospheric gases separately from the steam such that the discharged steam has a lower concentration of nitrogen, oxygen,

carbon dioxide, and other water soluble atmospheric gases than the feed water.

12. (New) An apparatus for generating steam with a reduced atmospheric gas content, the apparatus comprising:

a plurality of heated vertical evaporation tubes which receive liquid feed water at an upper end and discharge steam at a lower end;

a feed line for supplying feed water which contains dissolved water soluble atmospheric gases;

a means for distributing the feed water over upper ends of the vertical evaporation tubes and for liberating the dissolved water soluble atmospheric gases from the feed water before the feed water enters the upper ends of the vertical evaporation tubes; and,

a means for removing the steam separate from the liberated water soluble atmospheric gases such that the product steam has a lower content of water soluble atmospheric gases than the feed water.

A clean copy of ALL pending claims is attached to this paper as **APPENDIX 1**.

#### REMARKS

This amendment is responsive to the Office Action of August 12, 1962. Reconsideration and allowance of claims 1-12 are requested.

#### The Office Action

Claims 1-10 stand rejected under 35 U.S.C. § 112, second paragraph, with a list of objections to claims 1-5, but no indication of any defects in claims 6-10.

Claims 1, 2, 4, and 8 stand rejected as being either anticipated by or obvious over either El-Aillawy (US 4,694,136) or Blanget (US 5,930,992).

Claims 3, 5, 6, 7, 9, and 10 stand rejected under 35 U.S.C. § 103 as being obvious over Hohmann (US 4,981,555) or Ryham (US 5,246,541).